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ABSTRACT

Research has indicated that bulimics desire to weigh below the minimum healthy weight for their height. In order to examine differences between subjects' and raters' assessment of ideal body size, women participants were separated into four groups, consisting of 11 bulimics and 36 normal-weight females divided into dieters, restrained normals, and normals. Each subject was presented with a set of seven silhouettes, with one silhouette drawn from her photograph. The remaining silhouettes represented 2.5 percent, 5 percent, and 7.5 percent increases and decreases in the size of the original figure. Each subject selected her ideal figure from the seven randomly-presented silhouettes. Subsequently, female raters selected an ideal figure for each of the 47 subjects. The results indicated no differences between subjects' and raters' selection of ideal body size for any of the groups; no group desired to be thinner than the degree of thinness considered appropriate by others. However, neither the subjects nor the raters viewed any of the groups as being an ideal size at present, including the normal group who averaged 4.5 percent underweight. (Author/LLL)

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The Assessment of Ideal Body Size By Subjects and Objective Raters

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Poster presented at the Southeastern Psychological Association Convention, New Orleans, Louisiana, March 29, 1984.

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Abstract

The purpose of the present investigation was to examine differences between subjects' and raters' assessment of ideal body size in bulimics and three groups of normal-weight females (dieters, restrained normals and normals). Each subject was presented with a set of seven silhouettes, with one silhouette having been drawn from the subject's actual photograph. The remaining silhouettes represented 2.5%, 5% and 7.5% increases and decreases in size of the original figure. Each subject selected their ideal figure from the 7 randomly-presented silhouettes. Subsequently, female raters selected an ideal figure for each of the 47 subjects.

The results indicated that there were no differences between the subjects' and raters' selection of ideal body size for any of the groups, showing that no group desired to be thinner than that considered appropriate by others. Interestingly, however, neither the subjects nor the raters viewed any of the groups as being an ideal size at present, including the normal group who averaged 4.5% underweight. Possible explanations for these findings are discussed and suggestions are made for future research.

Introduction

Bulimia, a syndrome of gorging that may include vomiting, abuse of diuretics/cathartics, and starvation, has recently become the subject of numerous journal articles and psychological research (Lowenkopf, 1982). Associated with excessive concerns about weight and appearance, this syndrome reportedly occurs in anorectic, normal, and obese persons (Abraham & Beumont, 1982). No estimate of the frequency of this disorder in the general public is currently available. A study by Strangler and Printz (1980), however, reported a 3.8% incidence in a sample of 500 students seen at the university psychiatric clinic. Furthermore, Halmi, Falk, and Schwartz (1981) surveyed 355 college students and found that 13% of the respondents experienced all the bulimic symptoms as defined by the DSM-III. Thus, this syndrome appears to be relatively common, at least in college populations. It appears to affect mainly females, with less than 5% of the cases reported in the literature involving males (Mitchell & Pyle, 1982).

For the individual with this disorder, the binging and purging cycle of behavior affects their daily functioning. For example, Mitchell, Pyle, and Eckert (1981) found that the average bulimic engages in 11.7 binge episodes each week, thus occupying a considerable amount of their time. Adverse psychological consequences have also been reported to occur, with the DSM-III stating that the bulimic experiences "disparaging self-criticism and a depressed mood" following the binges (American Psychiatric Association, 1980, p. 70). Other authors have stated that binge eating is followed by guilt, low self-esteem, and depression (Pyle, Mitchell & Eckert, 1981; Boskind-Lodahl, Sirlin & White, 1978; Palmer, 1979). Medical consequences of this behavior may occur as well. The consequences of binging may include a bloated feeling, anal irritation, and acute gastric dilation, while the laxative abuse and vomiting may result in potassium depletion, urinary

infections, possible renal failure, rectal bleeding, dehydration, and swollen salivary glands (Lowenkopf, 1982). Thus, the consequences of such behavior are quite serious and even potentially life-threatening.

One associated characteristic of bulimia discussed in the literature is distorted body image, with bulimics reporting feeling obese in spite of their normal weight status (Pyle et al., 1981; Garfinkel & Garner, 1982). Garner and Garfinkel (1981) described another type of body image disturbance that may occur with or without the overestimation of body size. They noted that anorectics take great pleasure in a thin figure and appear, in fact, to overvalue their inappropriately thin shape. Studies with bulimics also have indicated that bulimics desire to weigh below the minimum healthy weight for their height (Pyle et al., 1981; Fairburn & Cooper, 1982). Such findings are difficult to interpret definitively, however, due to the lack of inclusion of a group of objective raters to provide an objective standard against which to compare the ideal selected by the subjects. Thus, although bulimics may desire to weigh less than the minimum for their height, this may merely reflect the North American cultural ideal of thinness.

This study was designed to examine body image disturbance in terms of overvaluation of a thin shape in bulimic females. Three carefully selected control groups were included to partial out any effects due to having a history of adult-onset obesity or concerns about food and dieting which may influence body image perception. To assess body image, a silhouette technique based on one developed by Chiodo and Latimer (in press) was used in which a silhouette was drawn directly from the subject's actual photograph. The silhouette then was increased and decreased in size by 2.5%, 5% and 7.5% respectively. From the seven silhouettes, each subject was asked to select her ideal figure. A group of normal weight females was also used as objective raters to select which figure they considered to

be the ideal for each subject. It was predicted that the bulimic group would overvalue a thin shape by selecting an ideal silhouette that was smaller than that deemed by the raters to be ideal. For the control groups, agreement between the subjects and raters on ideal body size was expected.

METHOD

Subjects

Forty-seven research participants meeting the selection criteria were included. Fifteen of these subjects were recruited through newspaper advertisements and 29 were undergraduate females currently enrolled in a psychology course. Three of the bulimics were recruited through local mental health facilities, although none had begun treatment prior to their participation. All subjects were entered in a lottery for a nominal cash prize for their participation. Those subjects enrolled in a psychology course were also given course credit for participation. Therapy intake interviews were arranged for an interested bulimic subject, resulting in two such intakes.

Eleven subjects currently meeting the DSM-III criteria for bulimia and using vomiting as a weight control strategy comprised the bulimic group. The 12 dieters had no history of bulimia, had previously weighed more than 20% above the average weight for their height as adults and currently weighed less than this amount. Twelve subjects having no history of bulimia, never having weighed more than ± 10% of the average weight for their height as adults and scoring 19 or greater on Herman and Polivy's (1975) Restraint Scale, comprised the restrained normal group. Finally, a group of normal subjects consisted of subjects with no history of bulimia, no history of weighing more than ± 10% of the average weight for their height as adults, and who scored less than 13 on the Restraint Scale. A group of ten female undergraduates recruited from the research participant pool and meeting the criteria for the normal experimental group were used as objective raters. Average weight for each subject was calculated by taking 100 lbs. as the average weight for a woman 5 feet 0 inches tall and then adding 5 lbs. for each additional inch in height.

One-way analyses of variance on the variables age and weight change between session 1 and session 2 revealed that the groups were not significantly different. A one-way analysis of variance on the restraint scores of the three highly restrained groups (bulimics, dieters, and restrained normals) revealed no significant difference. However, the four groups were not equivalent on current percentage overweight. A one-way analysis of variance on percentage overweight revealed a statistically significant difference, $F = 5.42$, $p < .01$. A Duncan Multiple Range test revealed that the normal group differs significantly from the other groups on this dimension, $p < .05$. The means and standard deviations for these variables are presented in Table 1.

Procedure

Upon arriving at the laboratory, the experimenter seated the subject at a table with two chairs. A large white sheet was mounted on the wall to act as a backdrop for the photograph taken. The subject was then given a Restraint Scale to complete and was asked about her weight history in detail. Subjects not meeting the criteria were given a brief explanation of the study and were dismissed. If the subject met all the criteria for a given group, she was given a plain navy leotard in which to dress herself while the experimenter was out of the room. When the subject was attired, she was placed next to the sheet-covered wall and a side-view photograph was taken using a Polaroid Instamatic camera. The subject was then weighed on a balanced scale and the second appointment was scheduled for approximately one week later.

The photograph for a given subject was then prepared by a graphic artist employed by the University of Georgia psychology department. Working on a sheet of workable acetate, the artist drew her true image from the photograph. She then used a pantograph to increase and decrease

the original figure by 2.5%, 5%, and 7.5% respectively in the following body areas: neck, arms, bust, stomach, thighs, and calves. The graphic artist drew silhouettes for a given subject in rondom order to eliminate any effect due to ordering. When rank ordered from smallest to largest, however, silhouette 4 represented the actual body size of a given subject. (An example of the silhouette sheet appears in Figure 1.)

Approximately one week later, the subject returned and was presented with her set of seven silhouettes. The subject then was instructed to study the silhouettes and select the one representing an ideal figure for her. Upon completion of the selection, the subject was again weighed, debriefed and provided feedback as to her actual figure.

Following the self-assessment by the 47 experimental subjects, 10 female raters were recruited through the research participant pool. Potential raters were interviewed to determine if they met the criteria for the normal experimental group and an appointment was scheduled with eligible raters. Each rater was seated alone in the experimental room and given the set of silhouettes for each of the 47 experimental subjects, with the order of the presentation of the sets being randomized for each rater. Each rater was asked to select the ideal figure for a given subject from among her 7 silhouettes. Raters were given experimental credit for their participation. Upon completion of the task, the purpose of the study was explained and any questions were answered.

Results

Group differences in the selection of their ideal size were tested using a Groups by Selector fixed design analysis of variance, with subjects and raters being the selectors. The means and standard deviations for ideal size as indicated by subjects and raters is found in Table 2. As illustrated in Figure 2, there was a significant main effect for Groups $F(3,86) = 7.26$, $p < .01$. A post-hoc analysis conducted using the Duncan Multiple Range test revealed that the ideal chosen by both subjects and raters for the normal group was significantly larger than the ideal chosen for the other groups, $p < .05$.

As seen in Figure 2, both subjects and raters appear to select as an ideal size a silhouette that is smaller than the subject's actual size. To determine if the raters consider any group to be an ideal size at present, the mean rater ideal size for each group was compared to the value 4.0 representing the subjects' actual figure. The results of the t-tests on each group confirm a significant discrepancy, $p < .01$, for all groups between the subjects' actual size and their ideal size as determined by the raters.

Similarly, to determine if the subjects within a particular group consider themselves to be an ideal size, the mean size of the silhouette selected as being the ideal by subjects within a group was compared to the value 4.0, again representing the subjects' actual size. The results of the t-tests found a significant discrepancy for all groups ($p < .01$ for bulimics, dieters and restrained normals, $p < .05$ for normals) between the subjects' actual size and their ideal size.

Because discrimination between small changes in the size of the silhouettes is crucial to the internal validity of this technique, a post-hoc correlation between the subject's current percentage overweight and the

silhouette chosen by the raters as being the ideal for that subject was calculated. It was believed that a high negative correlation between the subject's current percentage overweight and the silhouette selected as the ideal could serve as an overall index of the ability of the raters to discriminate sizes. The correlation obtained was $r = -.74$ across groups.

Discussion

In the present study, subjects within all groups selected an ideal size that was statistically equivalent to that deemed ideal by the objective raters. Thus, no group appeared to desire a shape considered by others as being too thin, with this being one type of body image disturbance that may be present in subjects with eating disorders.

The ideal body size chosen by both subjects and raters for the normal group was significantly larger than the ideal for the other groups. This finding can be interpreted as merely reflecting the pre-existing weight differences among groups. Thus, it is logical that the normal group, with the lowest average weight of the groups, would have a larger ideal than the other groups. A rather surprising finding, however, was that neither the subjects nor the raters considered any of the groups to be an ideal size at present, including the normal group that averaged 4.5% below ideal weight for their height. There appear to be two possible explanations for this finding. First, this selection of a thin ideal by both female subjects and raters may reflect a culture in which a thin shape is considered desirable. A number of authors have cited the American preoccupation with slender figures as a contributing factor in the development and maintenance of anorexia nervosa (Bruch, 1973; Boskind-Lodahl, 1976; Leon, 1977). An alternative explanation is that this finding is the result of the methodology used. Subjects in this experiment were presented with silhouettes showing the side view of a female in a leotard, thus allowing even minor flaws of a given body part to be quite noticeable. Thus, both subjects and raters may select a silhouette they consider too thin because, for example, the stomach appears very flat. Most likely, however, these results are due to a combination of the

above-stated explanations. In other words, the small size selected as the ideal may reflect the cultural ideal of a body appearing nude, and this ideal may be different for clothed females.

A high post-hoc correlation ($r = -.74$) between the subject's current percentage overweight and the ideal selected by the raters can be interpreted as evidence of the raters' overall ability to discriminate between sizes of the silhouettes. Therefore, as the subjects increased in weight, the raters showed a strong tendency to choose a smaller silhouette as being ideal, a tendency that may be considered accurate.

Female objective raters selected figures similar to those considered ideal by the subjects. Notably, the raters were normal-weight females with no history of obesity as adults and with no present concerns about dieting or weight. Further research is needed to determine what effect demographic and weight variables may have on the selection of an ideal figure for others.

In conclusion, further research is needed to determine if bulimics do indeed overvalue a thin shape. Such research should include carefully selected control groups, as well as a group of objective raters to provide a standard against which to compare the figures selected. Further research is also needed to determine those characteristic of objective raters which may influence their selection of an ideal figure and may affect the prevailing ideal of thinness in our culture.

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Table 1

Demographic Variables for Groups

	AGE (Years)		WT. CHANGE (Lbs)		RESTRAINT SCORE		% OVERWEIGHT	
GROUP	$\bar{X}$	SD	$\bar{X}$	SD	$\bar{X}$	SD	$\bar{X}$	SD
Bulimics	21.00	5.66	0.55	2.44	25.46	4.13	2.09	10.91
Dieters	22.25	8.86	0.29	2.02	23.25	3.55	7.67	7.98
Restrained Normals	20.33	2.77	-1.71	3.08	21.75	2.96	1.75	4.59
Normals	22.10	4.95	-0.17	1.72	6.83	3.26	-4.50	4.56

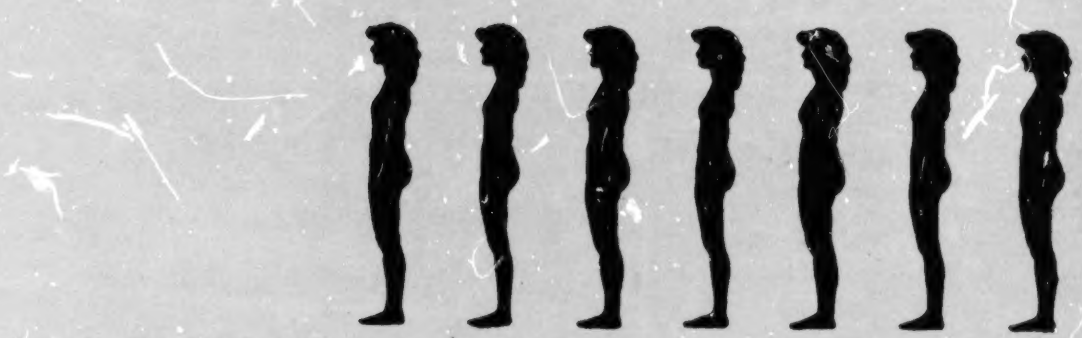

Figure 1. Example of the silhouette sheet (in reduced form).

Table 2

Means and Standard Deviations for Subject Ideal and Rater Ideal by Group

	SUBJECT IDEAL		RATER IDEAL	
GROUP	$\bar{X}$	SD	$\bar{X}$	SD
Bulimics	1.91	.54	2.57	1.37
Dieters	2.17	.72	1.89	.65
Restrained Normals	1.92	.90	1.88	.66
Normals	3.25	1.29	2.78	.99

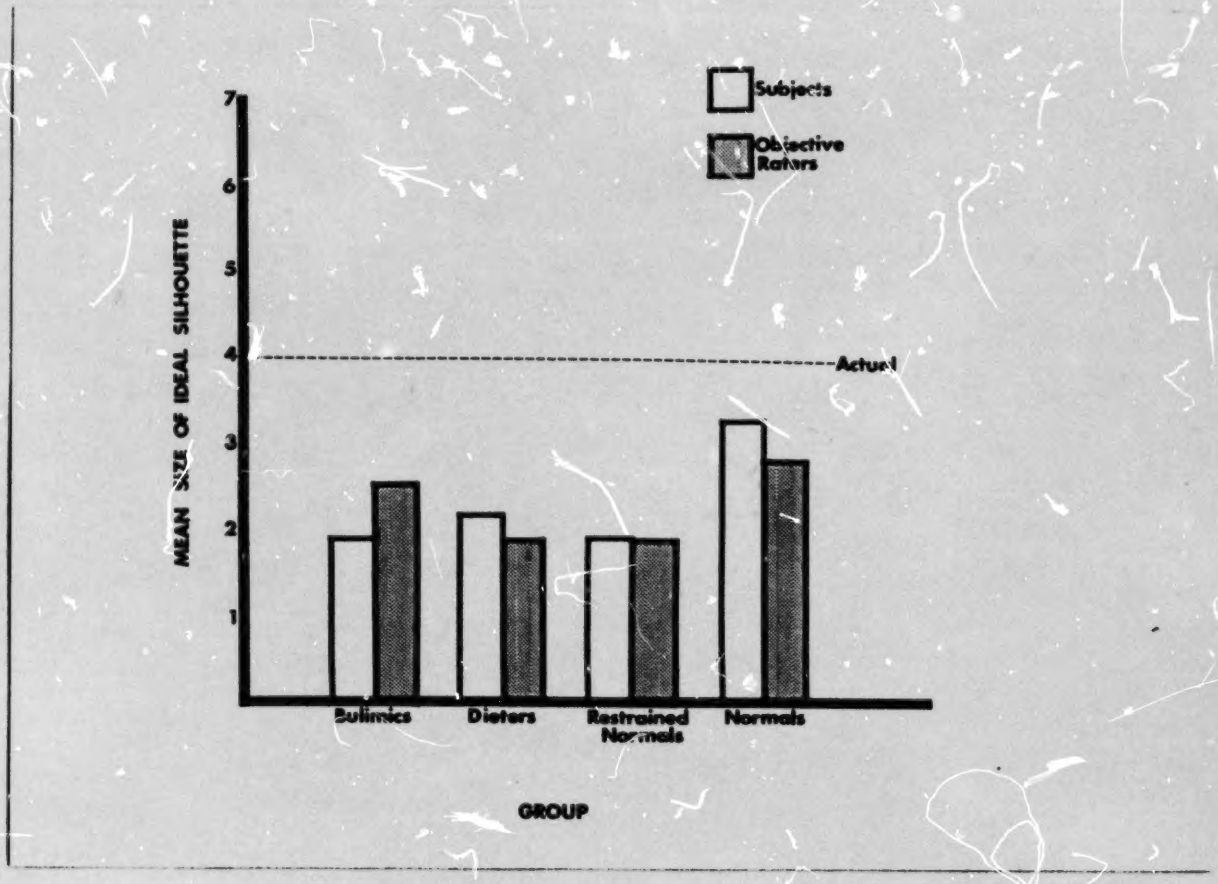

Figure 2. Mean size of ideal silhouette chosen by subjects and objective raters for bulimic, dieter, restrained normal and normal groups.